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CLAIMS

5 1. A system for controlling the temperature of the intake air in internal combustion Diesel engines suitable for heating intake air, controlling the temperature and knowing the flow rate of this airflow, **characterised** in that it comprises a module formed by heating means and a control circuit, being said module placed at each intake inlet (4) in order to heating and controlling the temperature of the intake air up to a limit at which the temperature is maintained constant and independent of the ambient temperature and wherein 10 heating means consist of a resistor having two segments (1) and (1') made of different metal alloys, joined on one of their ends (2) to form a thermocouple, wherein the joint of said segments (1) and (1') is placed in the centre of the intake duct.

15 2. System for controlling the temperature of the intake air in internal combustion Diesel engines, according to claim 1, **characterised** in that the control circuit connected to the terminals (8-8') of the resistor formed by the segments (1) and (1') is comprised of: two control signals CDE and T_ref, which are the power activation signal and the signal indicating the working 20 temperature respectively; outputs Vp and T informing of the voltage at the resistor terminals (8-8') and the temperature of the resistor respectively, with their corresponding amplification and conditioning circuits (9 and 12); and finally a comparator (11) with which the energy supply to the resistance is ordered when the power activation signal (CDE) is activated.

25 3. System for controlling the temperature of the intake air in internal combustion Diesel engines, according to previous claims, **characterised** in that the control circuit is connected to an electronic control unit (13) of the corresponding engine, with an interposed interface (14) that can be either 30 analogue or digital.